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December 20, 2012

Chairman Julius Genachowski
Commissioner Robert McDowell
Commissioner Mignon Clyburn
Commissioner Ajit Pai
Commissioner Jessica Rosenworcel

VIA EMAIL

Dear Chairman & Commissioners:

The Technology Access Program at Gallaudet University is concerned about the Commission's proposal of emergency rules that could put a moratorium on IP CTS, or introduce stringent certification requirements. We are particularly concerned about the suggestion of a "quick-fix"-style eligibility requirement based on a single value derived from peoples' audiograms.

Audiograms are notoriously poor predictors of speech recognition performance by people with a hearing loss. Moreover, even more sophisticated prediction algorithms fall short, as we will explain below. Imposing any such criterion would necessarily exclude people from the IP CTS program whose speech recognition performance is too poor to allow them access to alternatives.

In Ching, T. Y., Dillon, H., & Byrne, D. (1998). Speech recognition of hearing-impaired listeners: Predictions from audibility and the limited role of high-frequency amplification. *The Journal of the Acoustical Society of America*, 103, pg. 1128., the authors state that "The overall results of the studies on the effect of audibility demonstrate that audibility cannot adequately predict the reduced speech

recognition of hearing-impaired listeners with moderate or severe losses." Moderate through severe hearing loss covers a range from 41 dB HL to 90 dB HL. Audibility is a function of both the degree of hearing loss and configuration or shape of the hearing loss. A single number, as the Commission is suggesting for use as a criterion value, is even inadequate for characterizing audibility – much less speech understanding.

The field of hearing science has long tried to find a good predictor of speech understanding by using simple audiometric testing that is efficient and reliable - like the audiogram. However, these attempts have had limited success, so more sophisticated measures, like the Speech Intelligibility Index (referred to in the article cited above) have been developed. Even these more complex methods, which attempt to take into account auditory distortions that can be created by hearing loss and the detrimental impact of noise, have not yielded the kind of predictive gains that were hoped for by their developers. In some ways, this is not terribly surprising. Speech understanding is an extremely multifaceted process that can be impacted by a large variety of factors that go well beyond the functioning of any individual's peripheral auditory system as delineated in an audiogram or a value derived from the audiogram.

In addition, placing a dB HL limit on the use of IP captioned telephone service seems to make the assumption that the acoustic signal is fully audible for anyone with a better average hearing loss than the defined limit. If the commission wants to use audibility as an indicator of speech understanding, then it follows that there must be evidence that the acoustic signal provided over a telephone achieves adequate audibility across the telephone bandwidth (frequency range) in both quiet and noisy environments for the person with hearing loss - regardless of whether they use a hearing device or not. We do not believe there is such evidence and would suggest that full audibility cannot be achieved without the aid of a hearing device for anyone with a moderate hearing loss or greater - especially given the typical configuration of hearing loss, where there is more loss in the higher frequency regions. The commission must consider situations in which individuals with hearing loss use the telephone, but do so without a hearing device for whatever reason.

We respectfully suggest that, given the difficulty of evaluating speech recognition performance on the telephone for people with hearing loss, an emergency order drawing on simple audiogram-based criteria would be shortsighted. We also suggest that if changes to the IP CTS program are necessary, the options for change and their ramifications must be fully explored in an NPRM, with full consideration of comments by all stakeholders, including the community of IP CTS users, and professionals in the field of speech and hearing science.

Respectfully submitted,

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Cc (by e-mail):

Kris Monteith, Chief, Consumer & Governmental Affairs Bureau

Karen Peltz Strauss, Deputy Chief, Consumer & Government Affairs Bureau

Gregory Hlibok, Chief, Disability Rights Office